

Notice of Allowability	Application No.	Applicant(s)	
	10/687,352	PEREZ ET AL.	
	Examiner	Art Unit	
	Zoila E. Cabrera	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to 2/8/07.
2. The allowed claim(s) is/are 1-15,32-64 and 66.
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some* c) None of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. Notice of Informal Patent Application
6. Interview Summary (PTO-413),
Paper No./Mail Date 3/30/07
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Scott J. Menghini on March 30, 2007.

The application has been amended as follows:

Cancel claim 65.

Claim 1, line 2, delete "having valves and sensors".

Claim 1, lines 7-8, please delete "said first microcontroller" *on the first instance* and include -- a first microcontroller --

Claim 1, lines 7-8, please delete "a first microcontroller" *on the second instance* and instead include -- said first microcontroller --.

Claim 8, line 2, delete "having valves, sensors, and the like".

Claim 32, lines 5-6, delete "such as valves, sensors, and the like".

Claim 33, line 1, delete "The improvement as defined in" and instead insert --
The irrigation controller of --.

Claim 33, line 5, delete "external irrigation system valves, sensors and the like," and instead insert -- the plurality of remote irrigation function operators, --.

Claim 34, line 1, delete "The improvement as set forth in" and instead insert - -

The irrigation controller of - -.

Claim 35, line 1, delete "The improvement as set forth in" and instead insert - -

The irrigation controller of - -.

Claim 43, line 1, delete "The improvement as set forth in" and instead insert - -

The irrigation controller of - -.

Claim 44, line 2, delete "having valves and sensors".

Claim 49, line 2, delete "having valves, sensors, and the like".

Claim 49, last line, delete the comma and instead insert a period.

Claim 50, line 5-6, delete "such as valves, sensors, and the like".

Claim 60, last line, after "control unit" delete the period and insert - - ; and
a smart module removably coupled to another respective module coupling location, said
smart module having a third microcontroller capable of communicating with said first
microcontroller and operating together with said first microcontroller to control the
operation of a variety of irrigation functions that can not be performed by the first
module and the expansion module. - -.

Claim 66, line 2, delete "having valves, sensors, and the like".

Claim 66, lines 32-33, delete "system valves, sensors, and the like," and instead
insert - - system function operators, - -.

Allowable Subject Matter

2. Claims 1-15 and 32-64, and 66 are allowed.

The following is an examiner's statement of reasons for allowance: The allowability of the claims resides, at least in part, that the closest prior art of record **Williams et al. (US 5,956,248)** and **Lonn (6,230,089)** does not disclose or suggest, alone or in combination the step of:

As for independent claim 1, a base unit mounted within said housing and including a control panel removably mounted to the rear cabinet portion and a back plane circuit board mounted to the rear cabinet portion and releasably connected with said control panel, said back plane circuit board including a plurality of discrete electrical output connector sets communicating with said first microcontroller, said removable control panel including a first microcontroller for sending control signals to said back plane circuit and capable of receiving and storing irrigation system programs input into said first microcontroller; a base module removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through one of said plurality of output discrete electrical output connector sets, said base module including drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller; and an expansion module removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through another of said plurality of discrete electrical output connector sets, said expansion module including a second microcontroller capable of communicating with said first microcontroller, and drivers and output switches coupled with said second

microcontroller for actuating irrigation system valves, said first and second microcontrollers operating together in order to carry out irrigation system operations not capable of being performed by said first microcontroller alone, wherein the other of said plurality of discrete electrical output connector sets to which the expansion module is electrically coupled may be any one of said plurality of discrete electrical output connector sets capable of being coupled to a given expansion module independent of the electrical coupling of another expansion module to another of said plurality of discrete electrical output connector sets, in combination with the other elements and features of the claimed invention.

As for independent claim 8, a base module removably mounted within said housing at a first one of the plurality of module receiving locations and electrically coupled with said back plane circuit board, said base module including drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller; and at least one expansion module removably mounted within said housing at a respective one of the plurality of module receiving locations other than the first one and electrically coupled with said back plane circuit board, said expansion module including a second microcontroller capable of communicating with said first microcontroller, and a plurality of drivers and output switches coupled with said second microcontroller for actuating irrigation system valves, said first and second microcontrollers operating together to control the operation of an irrigation system, wherein each expansion module may be mounted to any one of the plurality of module receiving locations other than the first one independent of the

mounting of another expansion module to another of the plurality of the module receiving locations, in combination with the other elements and features of the claimed invention.

As for independent claim 32, said at least one module assembly includes a second internal microcontroller communicating with said base microcontroller and operable therewith to effect execution of irrigation program functions not capable of being executed by said base microcontroller alone and wherein each expansion module assembly may be mounted to any one of the plurality of module receiving locations independent of the mounting of another expansion module assembly to another of the plurality of the module receiving locations, in combination with the other elements and features of the claimed invention.

As for independent claim 44, an expansion module removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through another of said plurality of discrete electrical output connector sets, said expansion module including a second microcontroller capable of communicating with said first microcontroller, and drivers and output switches coupled with said second microcontroller for actuating irrigation system valves, said first and second microcontrollers operating together in order to carry out irrigation system operations not capable of being performed by said first microcontroller alone, wherein the expansion module may be electrically coupled and decoupled with said back plane circuit board through the other of said plurality of discrete electrical output connector sets without

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removing power to the control panel, in combination with the other elements and features of the claimed invention.

As for independent claim 49, a base module removably mounted within said housing at a first one of the plurality of receiving locations and electrically coupled with said back plane circuit board, said base module including drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller; and at least one expansion module removably mounted within said housing at a respective one of the plurality of module receiving locations other than the first one and electrically couple with said back plane circuit board, said expansion module including a second microcontroller capable of communicating with said first microcontroller, and a plurality of drivers and output switches coupled with said second microcontroller for actuating irrigation system valves, said first and second microcontrollers operating together to control the operation of an irrigation system, in combination with the other elements and features of the claimed invention.

As for independent claim 50, said at least one module assembly includes a second internal microcontroller communicating with said base microcontroller and operable therewith to effect execution of irrigation program functions not capable of being executed by said base microcontroller alone and wherein each expansion module may be mounted and removed to the respective module coupling location without removing power to the base microcontroller, in combination with the other elements and features of the claimed invention.

As for independent claim 51, an expansion module removably coupled to a respective module coupling location and including a second microcontroller capable of communicating with said first microcontroller and including driver circuitry for actuating irrigation valves, the second microcontroller capable of operating the driver circuitry for actuating said irrigation valves in accordance with control signals received from the first microcontroller, wherein the respective module coupling location may be any one of the plurality of module coupling locations independent of the coupling of another of the plurality of expansion modules to another of the plurality of module coupling locations, in combination with the other elements and features of the claimed invention.

As for independent claim 60, an expansion module removably coupled to a respective module coupling location and including a second microcontroller capable of communicating with said first microcontroller and including driver circuitry for actuating irrigation valves, the second microcontroller capable of operating the driver circuitry for actuating said irrigation valves in accordance with control signals received from the first microcontroller, wherein the expansion module may be electrically coupled and decoupled to the respective module coupling location without removing power to the control unit; and a smart module removably coupled to another respective module coupling location, said smart module having a third microcontroller capable of communicating with said first microcontroller and operating together with said first microcontroller to control the operation of a variety of irrigation functions that can not be performed by the first module and the expansion module, in combination with the other elements and features of the claimed invention.

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As for independent claim 66, a base module removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through one of said plurality of output discrete electrical output connector sets, said base module including drivers and output switches for actuating irrigation valves in accordance with control signals received from said first microcontroller; a plurality of expansion modules, each removably mounted within said rear cabinet portion and electrically coupled with said back plane circuit board through another of said plurality of discrete electrical output connector sets, said expansion module including a second microcontroller capable of communicating with said first microcontroller, and drivers and output switches coupled with said second microcontroller for actuating irrigation system valves, said first and second microcontrollers operating together in order to carry out irrigation system operations not capable of being performed by said first microcontroller alone, in combination with the other elements and features of the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zoila E. Cabrera whose telephone number is 571-272-

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3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

Zoila Cabrera
Primary Examiner
March 30, 2007


ZOILA CABRERA
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100

3/30/07